REMARKS

In the Office Action, claims 1-26 were rejected. By the present Response, the Applicant has amended claims 24-26. These amendments do not add any new matter. Upon entry of the amendments, claims 1-26 remain pending in the present patent application. In view of the foregoing amendments and the following remarks, the Applicant respectfully requests reconsideration and allowance of all pending claims.

Claim Rejection under 35 U.S.C. §101

The Examiner rejected claims 24-26 under 35 U.S.C. §101, because the claimed invention is directed to non-statutory subject matter. In particular, the Examiner stated:

> "One or tangible media encoding a computer program" must be "computer readable medium encoded with a computer program" in order to be statutory subject matter. The tangible medium may be medium other than a computer readable medium; therefore it is not statutory subject matter. The applicant is urged to amend the claims 24-26 to become a statutory subject matter.
>
> Office Action, pp. 2-3.

Claims 24-26

In view of the Examiner's remarks, the Applicant has amended claims 24-26 to recite "computer readable mediums encoded with a computer program." In view of these amendments, the Applicant respectfully requests the Examiner withdraw the rejections to claims 24-26.

Rejections Under 35 U.S.C. §103

The Examiner rejected claims 1, 6, 21, and 24 under 35 U.S.C. §103(a) as being unpatentable over Fritz et al. (U.S. Publication No. 2003/0199762, hereinafter "the Fritz reference") in view of Tannenbaum et al. (U.S. Patent No. 6,535,623, hereinafter "the Tannenbaum reference") and Wilensky et al. (U.S. Patent No. 7,171,057, hereinafter "the Wilensky reference"); rejected claims 2 and 5 under 35 U.S.C. §103(a) as being unpatentable over the Fritz, Tannenbaum, and Wilensky references, as applied to claim 1 above, and further in view of Yu et al. (U.S. Patent No. 6,563,513, hereinafter "the Yu reference"); rejected claim 3 under 35 U.S.C. §103(a) as being unpatentable over the Fritz, Tannenbaum, Wilensky, and Yu references, as applied to claim 2 above, and further in view of Nishikawa et al. (U.S. Patent No. 5,673,332, hereinafter "the Nishikawa reference"); rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over the Fritz, Tannenbaum, Wilensky, Yu, and Nishikawa references as applied to claim 3 above, and further in view of Avinash et al. (U.S. Publication No. 2003/0099405, hereinafter "the Avinash reference"); rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over the Fritz, Tannenbaum, and Wilensky references as applied to claim 1 above, and further in view of the Avinash reference; rejected claims 8, 22, and 25 under 35 U.S.C. §103(a) as being unpatentable over the Fritz reference in view of the Tannenbaum, Wilensky, and Yu, Nishikawa, and Avinash references; rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over the Fritz, Tannenbaum, Yu, Wilensky, Nishikawa, and Avinash references as applied to claim 8 above, and further in view of Nakabayashi et al. (U.S. Patent No. 7,113,306, hereinafter "the Nakabayashi reference"); rejected claims 11, 16, 18-20, 23, and 26 under 35 U.S.C. §103(a) as being unpatentable over the Tannenbaum reference in view of Hsieh (U.S. Patent No. 6,009,140, hereinafter "the Hsieh reference") and the Wilensky reference; rejected claims 12 and 15 under 35 U.S.C. §103(a) as being unpatentable over the Tannenbaum, Hsieh, and Wilensky references as applied to claim 11 above, and further in view of the Yu reference; rejected claim 13 under 35 U.S.C. §103(a) as being unpatentable over the Tannenbaum, Hsieh, Wilensky,

and Yu references as applied to claim 12 above, and further in view of the Nishikawa reference; rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over the Tannenbaum, Hsieh, Wilensky, Yu, and Nishikawa references as applied to claim 13 above, and further in view of the Avinash reference; and rejected claim 17 under 35 U.S.C. §103(a) as being unpatentable over the Tannenbaum, Hsieh, and Wilensky references, as applied to claim 11 above, and further in view of the Avinash reference. The Applicant respectfully traverses these rejections.

Legal Precedent

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 U.S.P.Q. 580 (C.C.P.A. 1974). However, it is not enough to show that all the elements exist in the prior art since a claimed invention composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). It is important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* Specifically, there must be some articulated reasoning with a rational underpinning to support a conclusion of obviousness; a conclusory statement will not suffice. *In re Kahn,* 441 F.3d 977, 988 (Fed. Cir. 2006). Indeed, the factual inquiry determining whether to combine references must be thorough and searching, and it must be based on *objective evidence of record. In re Lee,* 61 U.S.P.Q.2d 1430, 1436 (Fed. Cir. 2002). Moreover, if the proposed modification or combination or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (CCPA 1959); *see* M.P.E.P. §2143.01(IV).

Moreover, the Applicant submits that, during patent examination, the pending claims must be given an interpretation that is *reasonable* and *consistent* with the specification. *See In re Prater*, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); *In re Morris*, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); *see also* M.P.E.P. §2111 (describing the standards for claim interpretation during prosecution). Indeed, the *specification* is "the primary basis for construing the claims." *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (citations omitted). It is usually dispositive. *See id.* Interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *See In re Cortright*, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); *see also* M.P.E.P. § 2111. That is, recitations of a claim must be read as they would be interpreted by those of ordinary skill in the art. *See Rexnord Corp. v. Laliram Corp.*, 60 U.S.P.Q.2d 1851, 1854 (Fed. Cir. 2001); *see also* M.P.E.P. § 2111.01. In summary, an Examiner, during prosecution, must interpret a claim recitation as one of ordinary skill in the art would reasonably interpret the claim in view of the specification. *See In re American Academy of Science Tech Center,* 70 U.S.P.Q.2d 1827 (Fed. Cir. 2004).

Omitted Features of Independent Claims 1, 21, and 24

Applicant respectfully submits that the Fritz, Tannenbaum, and Wilensky references collectively failed to disclose each element of independent claims 1, 21, and 24. The present independent claims 1, 21, and 24, recite, *inter alia*, "performing spike noise dependent blending of data derived from the input image data with the processed image data based upon the characterization." In the Office Action, the Examiner cited the Wilensky reference for disclosing spike noise dependent blending. Office Action, para. 9(1)(B). Specifically, the Examiner equated the removal of noise from a blended image with the spike noise recited in the present claims. *Id.*; *see* Wilensky, col. 4, lines 35-37. Additionally, the Examiner equated the blending of image components from separate

image regions with the blending of input image data with processed image data recited in the present claims. Office Action, para. 9(1)(B); *see* Wilensky, co. 4, lines 63-66.

First, Applicant asserts that the Wilensky reference fails to teach or suggest performing spike noise dependent blending, as recited by independent claims 1, 21, and 24. Instead, the Wilensky reference appears to disclose blending two separate image regions together to produce a blended image with improved noise characteristics. Wilensky, col. 6, lines 38-40. The Wilensky reference specifically defines noise as "a non-local property of an image." Wilensky, col. 6, line 56. In other words, the Wilensky reference discloses blending to reduce non-local noise occurring throughout a blended image.

Applicant asserts that the specification clearly differentiates spike noise from non-local noise. For example, the specification explains that typical image noise may be a mixture of two kinds of noise: 1) "random point noise, which may also be referred to as spike noise," and 2) "patterned noise." Specification, p. 2, lines 9-11. Further, the specification recognizes that "spike noise points in an image are inconsistent with their neighbors." *Id.* at p. 9, lines 22-23. In other words, as described in the present specification, spike noise is local in nature. In view of the specification, Applicant submits that simply blending components to reduce non-local noise, as disclosed by Wilensky, fails to teach or suggest performing spike noise dependent blending as recited by independent claims 1, 21, and 24.

Second, Applicant asserts that the Wilensky reference fails to teach or suggest blending "input image data with processed image data," as recited in claims 1, 21, and 24. Per the claim language, the processed image data is produced by "processing input image data." Thus, the claims recite the blending of data derived from the input image data with

processed data produced from the input image data. In short, both types of data that are blended together are derived from / produced from the input image data.

In contrast, the Wilensky reference discloses blending data from two separate image regions to form a blended image region. Wilensky, col. 5, line 65 to col. 6, line 1; col. 1, lines 7-9; Fig.2. Specifically, the Wilensky reference appears to teach generating two image components from a first region and generating two image components from a second region. Wilensky, col. 4, lines 44-50. The image components from the separate regions are blended together to produce two blended components. *Id.* at col. 4, line 63 – col. 5, line2. Specifically, the first component from region one is blended with the first component from region two to form a first blended component and the second component from region one is blended with the second component from region two to form a second blended component. *Id.* The first and second blended components are then merged together to produce a blended image region. *Id.* at col. 5, lines 4-5; *see also* Wilensky, Fig. 2. In summary, the Wilensky reference appears to teach blending data from two different regions. The Examiner has not pointed to any process taught by Wilensky that could reasonably be correlated to blending data based on the same image data. Therefore, absent some showing that the Wilensky reference teaches the recited subject matter of claims 1, 21, and 24 (i.e., blending data derived from input image data with processed input image data produced from the input image data) no *prima facie* case of obviousness is believed to exist with regard to claims 1, 21, and 24.

Moreover, the Applicant notes that the Fritz and Tannenbaum references fail to remedy the deficiencies of the Wilensky reference set forth above. Indeed, the Examiner merely cited the Tannenbaum reference for its alleged teaching of processing input image data by identifying features of interest. The Tannenbaum reference does not appear to contemplate the use of spike noise dependent blending in any manner.

Furthermore, the Examiner cited the Fritz reference for its alleged teaching of characterizing spike noise in input image data. *See* Office Action, para. 9(1). The Examiner equated reducing spike noise in an image with characterizing spike noise in the input image data as recited in claims 1, 21, and 24. *Id.*; *see also* Fritz, para. 72. However, as recited in claims 1, 21, and 24, the spike noise dependent blending is based upon the characterization of spike noise. Thus, the characterization is used to perform the blending. In contrast, the Fritz reference appears to teach filtering to reduce noise spikes before processing. Fritz, para. 72. Thus, the Fritz reference does not appear to contemplate the use of spike noise dependent blending in any manner.

In view of these deficiencies among others, the cited references, taken alone or in hypothetical combination, cannot render obvious the current independent claims 1, 21, and 24 and their dependent claims.

Omitted Features of Independent Claims 8, 22, and 25

Applicant submits that the Fritz, Tannenbaum, Wilensky, Yu, Nishikawa, and Avinash references collectively fail to disclose each element of independent claims 8, 22, and 25. The independent claims all recite, *inter alia*, "performing spike noise dependent blending of input image data with the processed input image data."

As discussed above in relation to independent claims 1, 21, and 24, none of the Fritz, Tannenbaum, or Wilensky references, taken alone or in hypothetical combination, teach or suggest the act of "performing spike noise dependent blending of input image data with the processed input image data," as recited in claims 8, 22, and 25. Therefore, at least in view of this deficiency, no *prima facie* case of obviousness exists with regard to independent claims 8, 22, and 25, and their dependent claims.

Moreover, none of the other cited references remedy the deficiencies set forth above. Indeed, the Examiner merely cited the Yu reference for its alleged teaching of rank order filtering. *See* Office Action, para. 10(1); para. 14(1). The Examiner merely cited the Nishikawa reference for its alleged teaching related to computing an absolute difference. *See id.* at para. 11; para. 14(1). The Examiner merely cited the Avinash reference for its alleged teaching related to a multi-level mask. *See id.* at para. 12; para. 14(1). None of these references appears to contemplate the use of spike noise dependent blending.

In view of these deficiencies among others, the cited references, taken alone or in hypothetical combination, cannot render obvious the current independent claims 8, 22, and 25, and their dependent claims.

Omitted Features of Claims 11, 18, 23, and 26

Applicant respectfully submits that the Tannenbaum, Hsieh, and Wilensky references collectively fail to disclose each element of independent claims 11, 18, 23, and 26. The independent claims all recite, in generally similar language, *inter alia*, "blend[ing] data derived from the input image data with the processed image data via weighting factors determined based upon the likelihood that the discrete picture elements exhibit spike noise."

As discussed above in relation to independent claims 1, 21, and 24, none of the Fritz, Tannenbaum, or Wilensky references, taken alone or in hypothetical combination, teach or suggest the act of "blending data derived from the input image data with the processed input image data" based upon the likelihood of spike noise, as recited in claims 11, 18, 23, and 26. Therefore, at least in view of this deficiency, no *prima facie* case of obviousness exists with regard to independent claims 11, 18, 23, and 26, and their dependents.

Additionally, the cited references, taken alone or in hypothetical combination, fail to teach or suggest "blend[ing] data . . . via weighting factors determined based upon the likelihood that the discrete picture elements exhibit spike noise," as generally recited by independent claims 11, 18, 23, and 26. In the Office Action, the Examiner cited the Hsieh reference as disclosing determining a likelihood that discrete picture elements in the input image data exhibit spike noise. Office Action, para. 16(1)(A). The Examiner cited the Wilensky reference as disclosing blending data via weighting factors. *Id.* at para. 16(1)(B). However, the Examiner provided no objective evidence for modifying Wilensky to determine weighting factors based upon the likelihood of spike noise.

Wilensky discloses "splitting a source image region into two components: a non-noise component and a noise component." Wilensky, col. 7, lines 6-8. One blending parameter is used for the non-noise component and another blending parameter is used for the noise component. *Id.* at col. 7, lines 45-50. As noted above, the Wilensky reference specifically defines noise as "a non-local property of an image." Wilensky, col. 6, line 56 (emphasis added). Thus, the Wilensky reference appears to disclose the use of blending parameters based on whether non-local noise exists. As discussed above, this is in contrast to the use weighting factors based upon the likelihood of spike noise, which is local in nature. Indeed, it would change the principle of operation of the Wilensky reference to determine the weighting factors based upon the likelihood of spike noise. As summarized above, a proposed modification of a reference is entirely improper and insufficient to support a *prima* facie case of obviousness, where the proposed modification would change the principle of operation of the cited reference. In view of these incompatible principles of operation, the cited reference cannot be modified as proposed by the Examiner, and the Examiner's rejection is improper.

In view of these contrasting different principles of operation, the Examiner's proposed combination of the Wilensky and Hsieh references is improper and cannot stand. The Wilensky reference is directed to non-local noise, while the Hsieh reference allegedly teaches determining the likelihood of spike, or local, noise. In view of these incompatible principles of operation, the cited references cannot be combined and the Examiner's rejection is improper.

Moreover, the Tannenbaum reference fails remedy the deficiencies set forth above. Indeed, the Examiner merely cited the Tannenbaum reference for its alleged teaching of processing input image data by identifying features of interest. *See* Office Action, para. 16(1). The Tannenbaum reference does not appear to contemplate blending data via weighting factors based upon the likelihood of spike noise in any manner.

In view of these deficiencies among others, the cited references, taken alone or in hypothetical combination, cannot render obvious the current independent claims 11, 18, 23, and 26, and their dependent claims.

Authorization for Extensions of Time and Payment of Fees

In accordance with 37 C.F.R. §1.136, Applicants hereby provide a general authorization to treat this and any future reply requiring an extension of time as incorporating a request thereof. The Commissioner is authorized to charge the requisite extension fee, and any other fees determined to be presently due, to Deposit Account No. 07-0845; Order No. 135059XZ(GEMS:0240).

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: February 26, 2008

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